SITE ASSESSMENT REPORT
FOR
TILTON PLATING
TILTON, VERMILION COUNTY, ILLINOIS
TDD No.: S05-9809-012
PAN: .8P1201SIXX

December 1, 1998

Prepared for:
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency Response Branch
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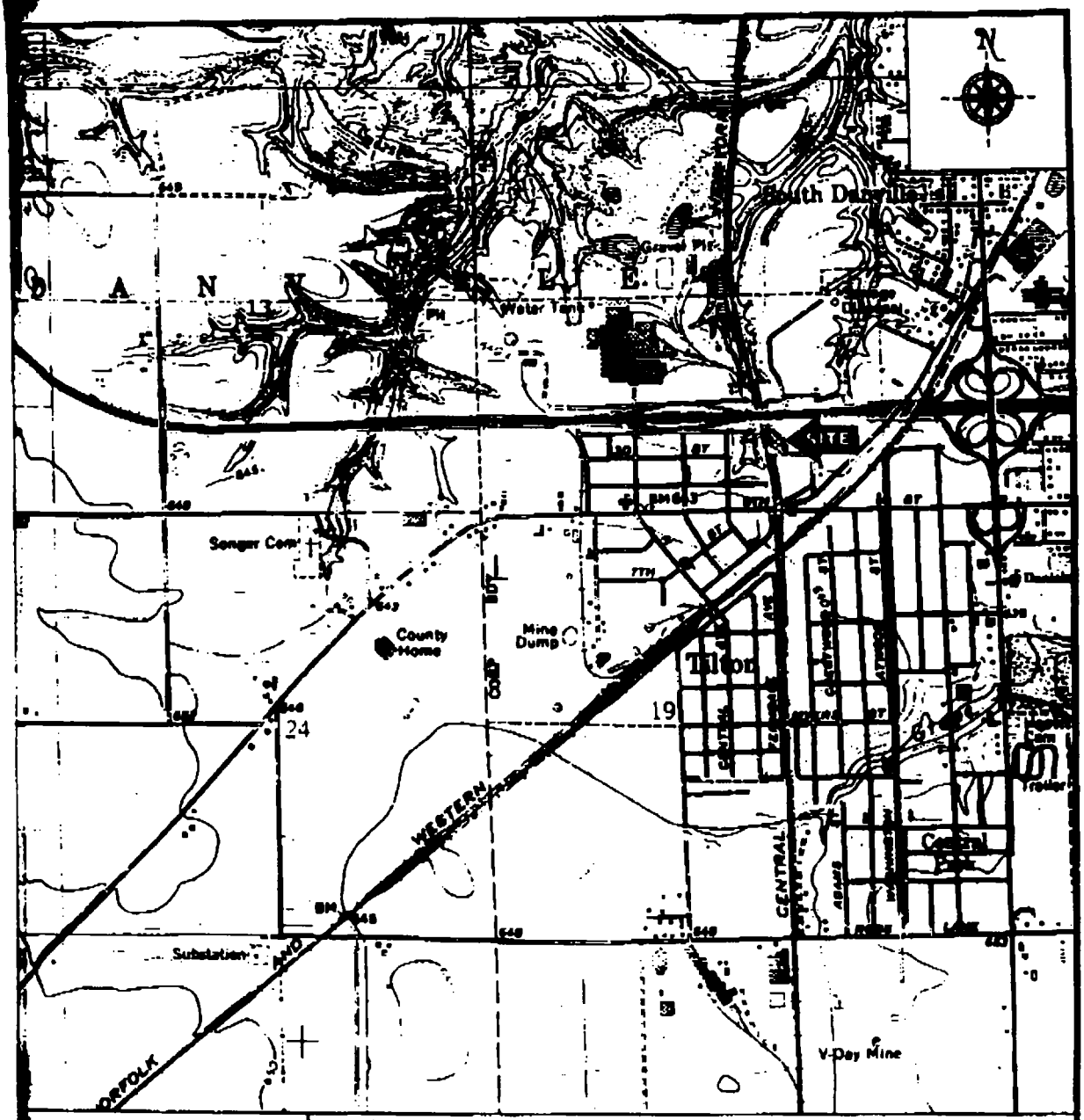
1. Introduction

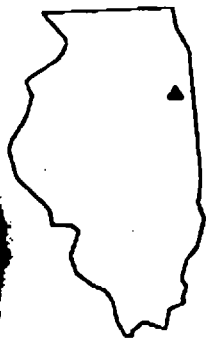
The United States Environmental Protection Agency (U.S. EPA) tasked the Ecology and Environment, Inc. (E & E), Superfund Technical Assessment and Response Team (START) to perform a site assessment at the Tilton Plating site in Tilton, Illinois. START was requested under Technical Direction Document (TDD) S05-9809-012 to obtain and review background information, conduct a site visit, document site conditions with written and visual documentation, make recommendations to U.S. EPA based on site assessment data collected, determine site characteristics, determine pollutant dispersal pathways, develop a health and safety plan, conduct sampling activities, and perform air monitoring. All site activities were coordinated under the authority of the U.S. EPA On-Scene Coordinator (OSC) Cindy Nolan.

western edge of the property.

On September 15, 1998, IEPA conducted a site investigation of Tilton Plating. During the investigation, IEPA inventoried chemical containers, collected soil samples, took x-ray fluorescence (XRF) readings of soil to determine metal content, and collected vat and drum samples which were later tested for pH with a pH meter. The pH readings ranged from 0 to 2.6. The soil, vat, and drum samples were sent to a laboratory for various analyses. These analyses were not received by IEPA at the time this report was prepared.



Quadrangle Location



Illinois

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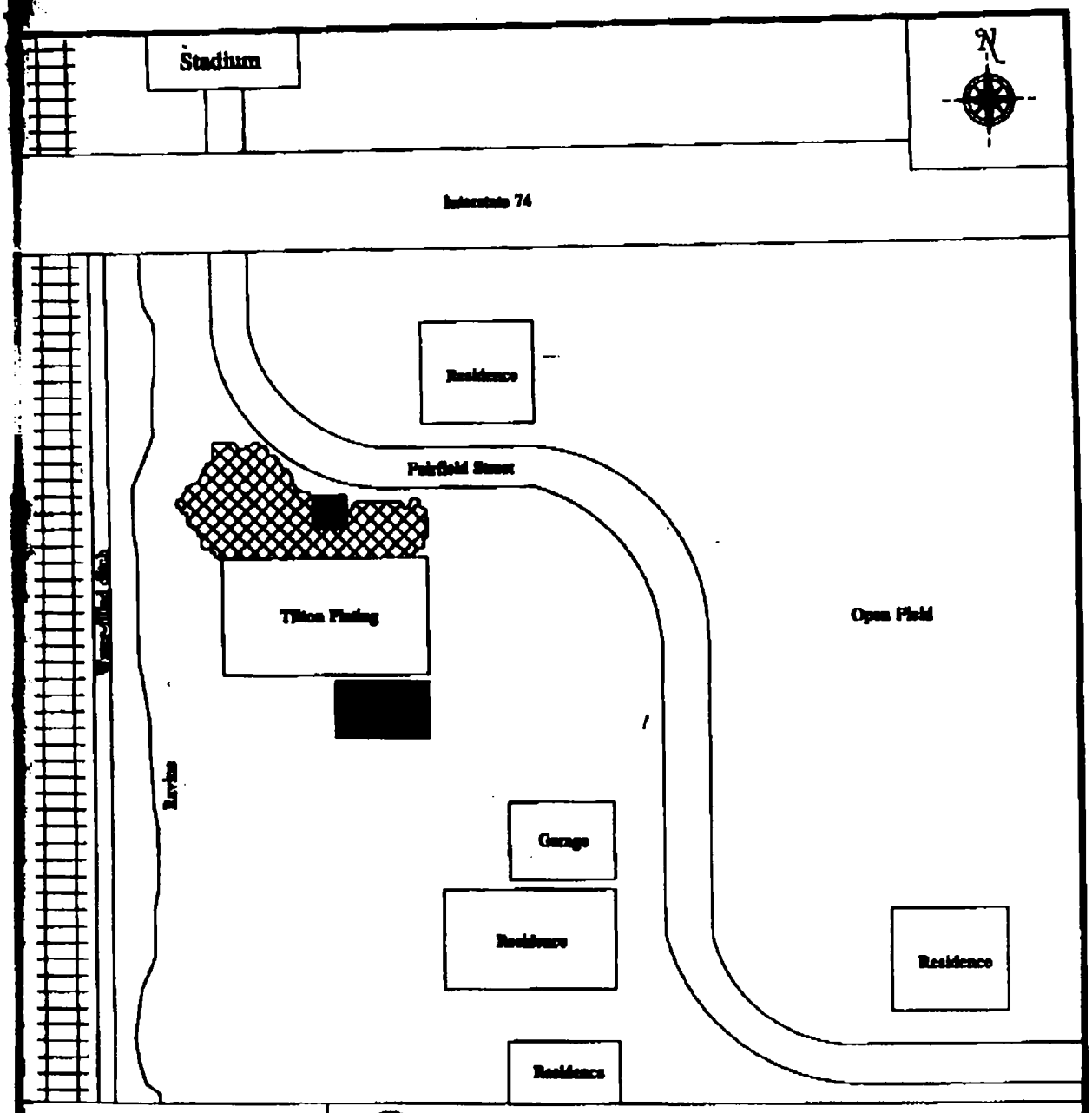
TITLE: Site Location Map		FIGURE: 2-1
SITE: Tilton Plating		SCALE: 1:24,000
CITY: Tilton	STATE: Illinois	TDD: S05-9809-012
SOURCE: USGS Topographic Map 7.5 minute Series Danville, Illinois SW Quadrangle		DATE: 1966



Legend

- Drums and debris
- Shed
- Dilapidated brick building
- Railroad

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TITLE: Site Features Map	FIGURE: 2-2
SITE: Tilton Plating	SCALE: Not to scale
CITY: Tilton STATE: Illinois	TDD: S05-9809-012
SOURCE: Ecology and Environment, Inc.	DATE: October 6, 1998

3. Site Assessment

The site assessment occurred on September 25, 1998. Present during the site assessment were U.S. EPA OSC Cindy Nolan, IEPA representatives Neelu Reddy and Mark Weber, and START members Bill Sass and Paul Atkociunas. START photodocumented and videotaped the exterior of the site (Attachment A). The southern exterior wall had a green-blue discoloration on the mortar and the western exterior wall had a yellow-brown discoloration. Several holes were observed in the southern wall. A ravine was observed west of the building. No vegetation was observed along the middle of the exterior western wall and down into the ravine. An exhaust vent is located at the top of the western wall. START observed yellow and brown discoloration on the wall below the vent, which may have been caused by chromic acid vented from the building. Numerous drums were observed on the exterior northern side of the building. The majority of the drums were composed of a poly material. Labels noted on the drums were "corrosive", "hydrochloric acid", "nitric acid", and "formaldehyde". The majority of the drums were labeled as acids. Several drums were observed outside the shed and several 5-gallon containers were observed inside the shed.

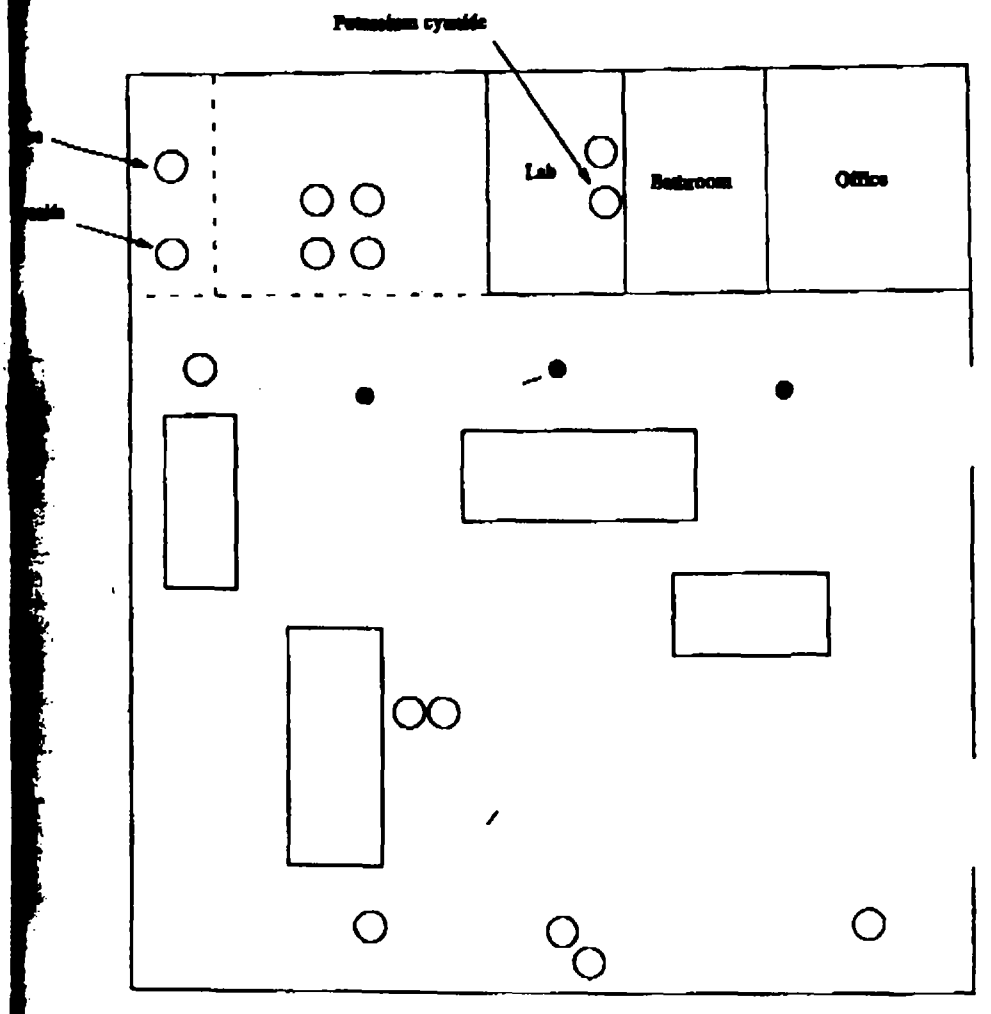
The building was entered and air monitoring was performed. No readings were detected above background on the cyanide monitor, the combustible gas indicator (CGI), which reads lower explosive limit (LEL) and oxygen, or the photoionization detector (PID). The north door on the eastern side of the building was not locked. A sample was collected from a small jar labeled "zinc cyanide" (Figure 3-1). The sample, which was field screened for cyanide using a Merck EM Quant Test Kit, tested positive for cyanide. START tested material from several containers for pH using pH paper. The pH ranged from < 1 to 2.

During a second entry into the building, START photodocumented and videodocumented hazards present inside the building. An inventory was taken of hazardous materials in the building (Table 3-1). The northwestern corner of the building contained a storage area. East of the storage area was a

oratory. There was evidence of the roof leaking in the building, as one vat was filled with
water. Three drains were observed in the floor of the building. One drain was believed to lead to
sewer; it is unknown where the other two drains lead. Soil was visible under one of the drains.

OSC Nolan initiated an emergency stabilization to secure the drums and building. That same day,
rth Tech, a contractor to U.S. EPA under the Emergency and Rapid Response Service (ERRS)
ntract, arrived on site, moved drums located outside the building to inside the building, and secured
e site. One drum of acid, which was in very poor condition, was overpacked.

On September 26, 1998, START and U.S. EPA revisited the site to complete the inventory. The
ventory indicated that nine vats, twenty-five 55-gallon drums, four 30-gallon drums, ten 20-gallon
ums and carboys, and 32 miscellaneous small containers (5-gallon in size and smaller) were present
the site. Note that these numbers are estimates, as some containers could have been missed while
mpleting the inventory.



Legend

Vat

Drum

Floor drain

Unfinished wall

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TITLE: Building Features Map	FIGURE: 3-1
SITE: Tilton Plating	SCALE: Not to scale
CITY: Tilton STATE: Illinois	TDD: S05-9809-012
SOURCE: Ecology and Environment, Inc.	DATE: October 6, 1998

Table 3-1

CONTAINER/WASTE INVENTORY
TILTON PLATING
SEPTEMBER 25, 1990

Quantity	Description	Capacity/ container (gal.)	Amount/ container (gal.)
2	0.5 liter brown bottle - unknown liquid - no label	0.15	0.15
1	0.5-gal. container labeled "aqueous ammonia"	0.5	0.13
4	1-gal. container labeled "copper sulfate" (solid granular), 5 lbs each	1	1
1	1-gal. glass bottle labeled "ammonium hydroxide"	1	0.25
1	1-gal. container labeled "sulfuric acid"	1	0.4
1	1-gallon poly jug labeled "ortho blue"	1	0.25
1	2-gal. metal container of unknown white powder	2	2
1	2-gal. container of granular potassium cyanide	2	1
1	20-gal. carboy labeled "nitric acid"	20	10
2	20-gal. poly carboy labeled "sulfuric acid"	20	15
2	20-gal. poly carboy labeled "hydrochloric acid"	20	20
1	20-gal. poly carboy wrapped in wood stakes containing acid	20	20
1	20-gal. container of unknown liquid, probably rainwater	20	20
1	20-gal. drum labeled "phosphoric acid"	20	20
2	20-gal. poly carboy containing unknown acids	20	10
1	20-gallon metal drum, contents unknown	20	10
1	250-gram (12-ounce volume) container of granular potash	0.1	0.05
1	30-gal. poly-lined fiber drum containing acid (was overpacked)	30	20
1	30-gallon metal container - no label, unknown liquid	30	8
1	30-gallon poly carboy - no label, unknown liquid	30	22
1	30-gallon drum labeled "copper solution"	30	15
2	5-gal. pail containing 6" sludge	5	2
3	5-gal. poly container labeled "black chromate"	5	5
1	5-gallon open-top bucket, labeled cleaning cmpd., non-DOT regulated	5	2.5
1	5-gallon bucket labeled "corrosive" and "iron phosphate"	5	2.5
1	5-gallon closed-top poly drum labeled "corrosive" nitric acid	5	0.5

Table 3-1

CONTAINER/WASTE INVENTORY
TILTON PLATING
SEPTEMBER 25, 1990

Quantity	Description	Capacity/ container (gal.)	Amount/ container (gal.)
1	5-gallon bucket of unknown liquid	5	5
1	5-gallon poly bucket labeled "iron phosphate"	5	5
1	55-gal. drum containing water, debris	55	55
1	55-gal. drum labeled "hydrochloric acid"	55	30
1	55-gal. drum labeled "formaldehyde"	55	30
3	55-gal. poly drums containing residue solids	55	2
2	55-gal. poly drum of unknown acid	55	55
7	55-gallon closed-top drum labeled "chromic acid and phosphate solution", assumed half acidic and half basic	385	385
2	acidic cleaner	5	5
2	automobile batteries	1	1
1	bottle of phosphoric acid	1	0.5
2	buckets containing unknown liquid, probably rainwater	5	5
5	empty poly drums	55	0
1	empty poly drums	30	0
1	garbage can containing bag labeled "boric acid"	12	10
1	laboratory reagent bottle - liquid - no label	0.1	0.1
1	paint can of paint remover	0.25	0.25
1	salvage drum, contents unknown	85	55
1	small container of white granular solid - no label	0.15	0.15
1	stainless steel drum labeled "nitric acid"	55	25
1	steel container full of sludge	10	10
1	steel tub containing 6" sludge	30	15
1	trash can containing 10" sludge	15	5
1	vat containing white crystalline solid - clumped (8' x 3' x 3')	500	20
1	vat containing 6" green liquid (8' x 3' x 3')	500	100

Table 3-1

CONTAINER/WASTE INVENTORY
TILTON PLATING
SEPTEMBER 25, 1998

Quantity	Description	Capacity/ container (gal.)	Amount/ container (gal.)
1	vat containing unknown liquid (4' x 3' x 4')	350	10
1	vat containing 1' blue liquid (3' x 3' x 4')	250	60
1	vat containing unknown liquid (3' x 3' x 4')	250	20
1	vat labeled "black oxide" (3' x 3' x 4')	250	30
1	vat full of clear liquid (possibly rainwater)	700	700
1	vat labeled "black oxide" (8' x 3' x 3')	500	250
1	vat containing unknown liquid (4' x 3' x 4')	350	10

gal. = gallon

4. Analytical Results

No samples were sent to a laboratory for analysis during this site assessment. Field tests for pH ested that the corrosive drums were acidic and that containers labeled "zinc cyanide" did contain ide.

5. Discussion of Potential Threats

Section 300.415, paragraph (b)(2) of the National Contingency Plan (NCP) lists factors to be sidered when determining the appropriateness of a potential removal action at a site. Specifically, following is a discussion of the applicable conditions which exist at the Tilton Plating site:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants. Acids, caustics, poisonous substances (cyanides), and heavy metals were found both inside the building and outside the building. Tilton Plating is located in a residential neighborhood. This situation makes it an attractive nuisance to people, children, and animals. The neighbor to the south of the site claims his dog died as a result of exposure to heavy metals detected in the animal's blood.

Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers that may pose a threat of release. A number of the hazardous materials found were contained in drums and vats. A vat inside the building was filled with rainwater from a leaky, deteriorating roof. If not removed, these hazardous substances have the potential to leak onto the floor and overflow, or the roof could collapse and break the deteriorating drums. The materials could then migrate to the drains in the floor and soak into the soil.

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate. IEPA found hazardous levels of heavy metals in the soil both on site and at a nearby residence across the street, indicating that contaminants have begun migrating off the property. Heavy rains may cause further migration of contaminants. Winds could cause dust particulates containing heavy metals to migrate.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released. As stated above, rainwater could cause vats and open drums to overflow, the roof to collapse, and contaminated soils to migrate. Winds can cause dust particulates to migrate. A heavy storm could cause further damage to the roof of the building.

6. Removal Actions/Cost Estimate

Conditions observed at the Tilton Plating site during the site assessment demonstrate appropriate [illegible] for warranting the initiation of a removal action. Hazardous materials stored in drums, tanks, and other containers, and possibly soil, pose an imminent public health threat to nearby residents. [illegible]oval action at the Tilton Plating site would include three major phases: 1) site stabilization; 2) [illegible]ardous waste removal and a soil extent of contamination (EOC) study; and 3) building demolition, excavation and disposal of contaminated soil. An estimate of costs for conducting a removal action [illegible] Tilton Plating site, totaling approximately $496,000, was prepared using the Removal Cost [illegible]gement System (RCMS) Cost Projection Module, version 4.2 (Appendix B).

The knowledge of container contents and degree of soil contamination at the Tilton Plating site are [illegible]ed to IEPA studies, which included XRF readings and pH readings, and U.S. EPA and START [illegible]ervations and field screening conducted during a site visit on September 25 and 26, 1998. [illegible]lytical data from IEPA was not available at the time this report was prepared. This situation makes [illegible]ecessary to base the removal cost estimate on certain assumptions. Those assumptions are as [illegible]lows:

Cleanup contractor rates are those of the ERRS contractor.

Phase 1 of the removal action will include mobilizing the ERRS contractor to stabilize the site, which will include moving all drums and other containers into the building, and replacing locks and doors on the building. This phase is estimated to take one working day.

Phase 2 will include mobilization of personnel and equipment, container sampling, compatibility and bulk testing, waste consolidation, disposal bidding, demolition of the building, and disposal of building debris. This phase is estimated to take 30 working days.

Phase 3 will include an EOC study, excavation of contaminated soil, and

transportation and disposal of excavated soil. A total of 20 working days will be required for this phase.

ERRS contractor personnel for Phase 1 will include one supervisor and one laborer; and for Phases 2 and 3 will consist of one supervisor, one field clerk, one foreman/equipment operator, and three laborers. The START contractor personnel will include one environmental scientist for the entire project and one additional environmental scientist to assist with sampling and hazcatting for 10 days. One U.S. EPA OSC will be on site at all times.

Security guards will be hired to secure equipment during non-working hours of active phases. Guards will not be provided during demobilization periods.

Volumes of containerized wastes were based upon U.S. EPA and START inventories (Table 3-1) and field screening data.

Wastestreams will include acidic liquids (400 gallons = 8 drums), base/neutral liquids (1,100 gallons), base/cyanide sludge (200 gallons = 4 drums), nickel liquids (100 gallons = 2 drums), copper liquids (75 gallons = 2 drums), chromate liquids (400 gallons = 8 drums), cyanide solids (2 gallons), miscellaneous solids with metals (50 gallons = 1 drum), hazardous debris (20 cubic yards), building debris (178 cubic yards), hazardous metal-contaminated soil (300 tons), and nonhazardous metal-contaminated soil (150 tons).

All waste streams will be shipped to off-site facilities for disposal. The acidic liquids, base/neutral liquids, base/cyanide sludge, nickel liquids, copper liquids, chromate liquids, miscellaneous solids with metals, hazardous debris, and hazardous metal-contaminated soil will be shipped to the Environmental Quality (EQ) Company near Detroit, Michigan, for treatment and disposal. The nonhazardous metal-contaminated soil, nonhazardous debris, and building debris wastestreams will be disposed of at the local Brickyard Disposal landfill. The 2 gallons of cyanide solids will be shipped to an incinerator for disposal.

Soil volumes assume excavation of the top 6 inches of soil, 40 feet in all directions from the building, with excavation of 2 feet of soil behind the building and under a portion of the floor. Of the estimated 450 tons (approximately 350 cubic yards) of soil, approximately 150 tons are assumed to be nonhazardous (special waste). The remaining 300 tons will require treatment for leachable metals.

The hazardous debris wastestream is assumed to be comprised of wood, paper, and other porous materials that cannot be decontaminated. This wastestream will be shipped to EQ for microencapsulation. Nonhazardous debris is assumed to be comprised of metal, plastic, and other materials which can readily be decontaminated.

The building debris is assumed to be nonhazardous. The volume estimate of 178 cubic yards of building debris was estimated using the volume of the building (40 feet by 40 feet by 10 feet high) multiplied by a factor of 0.3.

Table 6-1

WASTESTREAM SUMMARY
TILTON PLATING
TILTON ILLINOIS

Wastestream	Quantity	Unit Cost	Disposal Method	Disposal Location
[illegible] liquids	8 drums	$150	Treatment	EQ - MI
[illegible]/cyanide sludge	4 drums	$80	Treatment	EQ - MI
[illegible]neutral liquids	1,100 gallons	$1	Treatment	EQ - MI
[illegible] debris	178 cubic yards	$15	Landfill	Brickyard Disposal, IL
[illegible] liquids	8 drums	$150	Treatment	EQ - MI
[illegible] liquids	2 drums	$70	Treatment	EQ - MI
[illegible] solids	2 gallons	$150	Incineration	TWI - IL
[illegible] debris	20 cubic yards	$140	Microencapsulation	EQ - MI
[illegible] soil	300 tons	$105	Treatment	EQ - MI
[illegible] solids with [illegible]	1 drum	$70	Treatment	EQ - MI
[illegible] liquids	2 drums	$70	Treatment	EQ - MI
[illegible] debris	20 cubic yards	$15	Landfill	Brickyard Disposal, IL
[illegible] soil	150 tons	$15	Landfill	Brickyard Disposal, IL

7. Conclusion

The contaminants discovered during this site assessment in drums, vats, and containers have the ential to affect human health and the environment and should be removed. Discoloration of the rior walls of the building demonstrate migration of metal contaminants, supporting XRF data from A which indicated elevated levels of heavy metals in the soil. Also, the soil underneath the building most likely contaminated and should also be removed following demolition of the building.